

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-17. (Canceled)

18. (New) A distribution valve with flow meter for the use in the inlet of a hot water heating circuit, with a housing forming the inflow conduit, a branch line extending from the housing and an adjusting and measuring unit formed separately from the housing and arranged at the housing opposite the branch line and penetrating the housing wall, for the adjusting and displaying of a flow rate of a medium flowing through the branch line, wherein the adjusting and measuring unit comprises a valve closing body, which is operatively connected to an adjusting spindle in such a manner that it forms, together with a valve seat body which during conventional operation is stationary relative to the housing, a valve gap, which is adjustable by a rotating of the adjusting spindle for the adjusting of the flow rate, and wherein the adjusting and measuring unit includes a flow against member, which is located in a flow channel, through which in operation substantially the complete medium flowing off through the branch line flows, wherein the position of the flow against member in the flow channel is adjustable beginning from a starting position by a flow which flows from the valve gap to the branch line dependent from the flow rate, and wherein the flow against member is operatively connected to display means of the adjusting and measuring unit, which may be read off from the outside, in such a manner that different positions of the flow against member in the flow channel cause different displays of the display means, wherewith the respective flow rate through the branch line can be read at the valve at its outside, characterized in that the distribution valve is designed in such a manner that the flow exiting the valve gap during conventional operation is deflected prior to its impinging onto the flow against member at least twice, namely initially by a first sense of rotation in a first direction and thereafter by a second sense of rotation opposed to the first sense of rotation in a second direction.

19. (New) The distribution valve according to claim 18, characterized in that the flow exiting the valve gap is deflected prior to its impinging onto the flow against member in each case by at least 45°.

20. (New) The distribution valve according to claim 19, characterized in that the flow exiting the valve gap is deflected prior to its impinging onto the flow against member in each case by about 90°.

21. (New) The distribution valve according to claim 18, characterized in that a housing section of the adjusting and measuring unit, which is stationary during conventional operation of the distribution valve, sealingly contacts a housing portion of the branch line which is stationary during the conventional use of the distribution valve.

22. (New) The distribution valve according to claim 21, characterized in that said housing section of the adjusting and measuring unit contacts said housing portion of the branch line at its face end by sealing surfaces and/or by a seal.

23. (New) The distribution valve according to claim 21, characterized in that the structural member, which forms the walls defining the flow channel at least in the area in which the flow against member can be positioned by the flow during conventional operation, is arranged at least in part inside of said stationary housing section of the adjusting and measuring unit, and that this structural member and the stationary housing section are designed in such a manner and/or sealing elements are arranged between them in such a manner, that a forming of a leakage flow from the valve gap to the exit of the branch line by bypassing the flow channel is reliably prevented.

24. (New) The distribution valve according to claim 21, characterized in that the stationary housing section of the adjusting and measuring unit comprises radial or half-axial throughflow openings through which the medium can flow from the inflow conduit to the valve gap.

25. (New) The distribution valve according to claim 18, characterized in that the valve seat body is formed by a structural member of the adjusting and measuring unit.

26. (New) The distribution valve according to claim 18, characterized in that the walls defining the flow channel, at least within the area in which the flow against member can be positioned by the flow during the conventional operation, are formed by a housing section of the adjusting and measuring unit.

27. (New) The distribution valve according to claim 18, characterized in that the structural member, which forms the walls defining the flow channel, at least in the area in which the flow against member can be positioned by the flow during conventional operation, projects into the branch line.

28. (New) The distribution valve according to claim 27, characterized in that said structural member and the branch line are designed in such a manner and/or sealing elements are present between them in such a manner, that a formation of a leakage flow from the valve gap to the exit of the branch line reliably is prevented.

29. (New) The distribution valve according to claim 18, characterized in that the distribution valve is designed in such a manner that the flow flowing during conventional operation from the valve gap to the flow channel enters the flow channel through several radial openings in the wall of the flow channel ahead of the flow against member seen in the direction of flow.

30. (New) The distribution valve according to claim 29, characterized in that the radial openings are respectively uniformly distributed at the circumference of the flow channel.

31. (New) The distribution valve according to claim 30, characterized in that said radial openings are distributed along a common axial position, at the circumference of the flow channel.

32. (New) The distribution valve according to claim 30, characterized in that exactly two or exactly four radial openings are present.

33. (New) The distribution valve according to claim 18, characterized in that the distribution valve is designed in such a manner that the valve gap is formed by a concentric immersion of a conically shaped body of the valve closing body into a bore of the valve seat body, so that the valve gap, seen in the direction of flow, is a circular ring shaped gap of which the width of the gap decreases with a increasing immersing of the valve closing body into the bore of the valve seat body until it has a minimal value or amounts to zero.

34. (New) The distribution valve according to claim 33, characterized in that said conically shaped body of the valve closing body immerses into said bore of the valve seat body in the direction of the through flow of the branch line.

35. (New) The distribution valve according to claim 18, characterized in that the cross-section of the flow channel broadens in the direction of flow in the area in which the flow against member may be positioned at conventional operation by the flow flowing in same.

36. (New) The distribution valve according to claim 18, characterized in that the adjusting spindle, the valve closing body and the flow channel are formed by an one-piece component.

37. (New) The distribution valve according to claim 36, characterized in that said one-piece component is an one-piece injection molded part of a plastic material.

38. (New) The distribution valve according to claim 18, characterized in that the display means comprise a display rod, operated by the flow against member, and an adjusting member for a manual operating of the adjusting spindle, which completely encloses the outwards oriented free end of the display rod and is at least partly transparent for allowing a reading off of the respective position of the display rod and thereby of the flow rate through the branch line.

39. (New) The distribution valve according to claim 38, characterized in that the adjusting member is rigidly connected to the adjusting spindle.

40. (New) The distribution valve according to claim 39, characterized in that the adjusting spindle and the adjusting member are formed by a one-piece component.

41. (New) The distribution valve according to claim 40, characterized in that said one-piece component is of a transparent plastic material.

42. (New) A distribution arrangement, comprising at least two distribution valves according to claim 18.

43. (New) An adjusting and measuring unit for the distribution valves or the distribution arrangement according to claim 18.

44. (New) A distribution valve with flow meter for the use in the inlet of a hot water heating circuit, with a housing forming the inflow conduit, a branch line extending from the housing and arranged at the housing opposite the branch line and penetrating the housing wall for the adjusting and displaying of a flow rate of a medium flowing through the branch line, wherein the adjusting and measuring unit comprises a valve closing body, which is operatively connected to an adjusting spindle in such a manner that it forms, together with a valve seat body which during conventional operation is stationary relative to the housing, a valve gap which is adjustable by a rotating of the adjusting spindle for the adjusting of the flow rate, and wherein the adjusting and measuring unit includes a flow against member, which is located in a flow channel through which in operation substantially the complete medium flowing off through the branch line flows, wherein the position of the flow against member in the flow channel is adjustable beginning from a starting position by a flow which flows from the valve gap to the branch line dependent from the flow rate; and wherein the flow against member is operatively connected to display means of the adjusting and measuring unit which may be read from the outside in such a manner that different positions of the flow against member in the flow channel cause different displays at the display means, wherewith the respective flow rate through the branch line can be read at the valve at the outside, characterized in that a housing section of the adjusting and measuring unit, which is stationary during conventional

operation of the distribution valve, sealingly contacts a housing portion of the branch line which is stationary during the conventional use of the distribution valve.

45. (New) The distribution valve according to claim 44, characterized in that said housing section of the adjusting and measuring unit contacts said housing portion of the branch line at its face end by sealing surfaces and/or by a seal.

46. (New) The distribution valve according to claim 44, characterized in that said housing section of the adjusting and measuring unit contacts said housing portion of the branch line at its face end by sealing surfaces and/or by a seal.

47. (New) The distribution valve according to claim 44, characterized in that the structural member, which forms the walls defining the flow channel at least in the area in which the flow against member can be positioned by the flow during conventional operation, is arranged at least in part inside of the stationary housing section of the adjusting and measuring unit, and that this structural member and the stationary housing section are designed in such a manner and/or sealing elements are arranged between them in such a manner, that a forming of a leakage flow from the valve gap to the exit of the branch line by bypassing the flow channel is reliably prevented.

48. (New) The distribution valve according to claim 44, characterized in that the stationary housing section of the adjusting and measuring unit comprises radial or half-axial throughflow openings through which the medium can flow from the inflow conduit to the valve gap.

49. (New) The distribution valve according to claim 44, characterized in that the valve seat body is formed by a structural member of the adjusting and measuring unit.

50. (New) The distribution valve according to claim 44, characterized in that the walls defining the flow channel, at least within the area in which the flow against member can be

positioned by the flow during the conventional operation, are formed by a housing section of the adjusting and measuring unit.

51. (New) The distribution valve according to claim 44, characterized in that the structural member, which forms the walls defining the flow channel, at least in the area in which the flow against member can be positioned by the flow during conventional operation, projects into the branch line.

52. (New) The distribution valve according to claim 51, characterized in that said structural member and the branch line are designed in such a manner and/or sealing elements are present between them in such a manner, that a formation of a leakage flow from the valve gap to the exit of the branch line reliably is prevented.

53. (New) The distribution valve according to claim 44, characterized in that the distribution valve is designed in such a manner that the flow flowing during conventional operation from the valve gap to the flow channel enters the flow channel through several radial openings in the wall of the flow channel ahead of the flow against member (7) seen in the direction of flow.

54. (New) The distribution valve according to claim 53, characterized in that the radial openings are respectively uniformly distributed at the circumference of the flow channel.

55. (New) The distribution valve according to claim 54, characterized in that the radial openings are distributed at a common axial position.

56. (New) The distribution valve according to claim 53, characterized in that exactly two or exactly four radial openings are present.

57. (New) The distribution valve according to claim 44, characterized in that the distribution valve is designed in such a manner that the valve gap is formed by a concentric immersion of a

conically shaped body of the valve closing body into a bore of the valve seat body, so that the valve gap, seen in the direction of flow, is a circular ring shaped gap of which the width of the gap decreases with an increasing immersing of the valve closing body into the bore of the valve seat body until it has a minimal value or amounts to zero.

58. (New) The distribution valve according to claim 57, characterized in that said conically shaped body of the valve closing body immerses into said bore of the valve seat body in the direction of the through flow of the branch line.

59. (New) The distribution valve according to claim 44, characterized in that the cross-section of the flow channel broadens in the direction of flow in the area in which the flow against member may be positioned at conventional operation by the flow flowing in same.

60. (New) The distribution valve according to claim 44, characterized in that the adjusting spindle, the valve closing body and the flow channel are formed by an one-piece component.

61. (New) The distribution valve according to claim 60, characterized in that said one-piece component is an one-piece injection molded part of a plastic material.

62. (New) The distribution valve according to claim 44, characterized in that the display means comprise a display rod, operated by the flow against member, and an adjusting member for a manual operating of the adjusting spindle, which completely encloses the outwards oriented free end of the display rod and is at least partly transparent for allowing a reading off of the respective position of the display rod and thereby of the flow rate through the branch line.

63. (New) The distribution valve according to claim 62, characterized in that the adjusting member is rigidly connected to the adjusting spindle.

64. (New) The distribution valve according to claim 63, characterized in that the adjusting spindle and the adjusting member are formed by a one-piece component.

65. (New) The distribution valve according to claim 64, characterized in that said one-piece component is of a transparent plastic material.

66. (New) A distribution arrangement, comprising at least two distribution valves according to claim 44.

67. (New) An adjusting and measuring unit for the distribution valves or the distribution arrangement according to claim 44.